

Figure S1

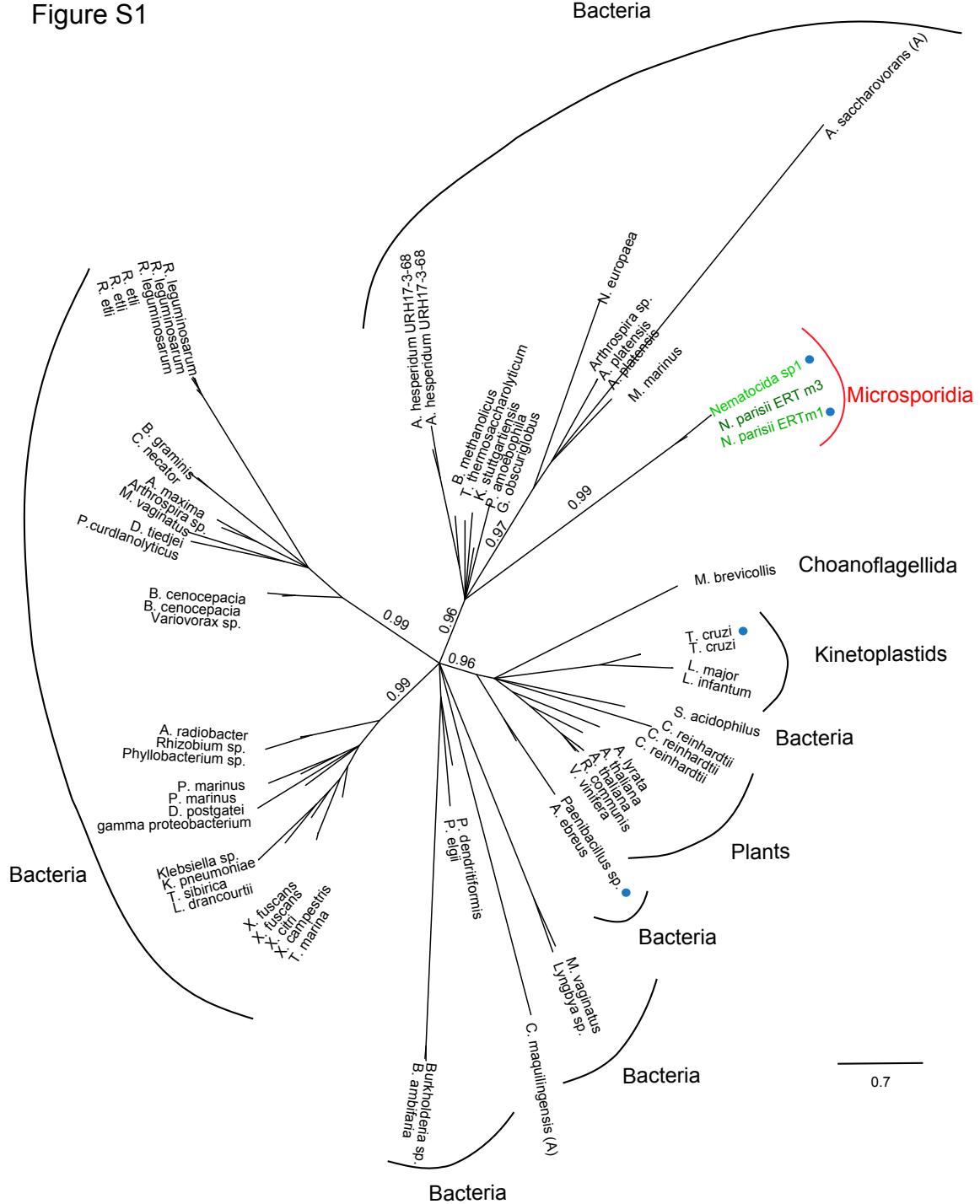
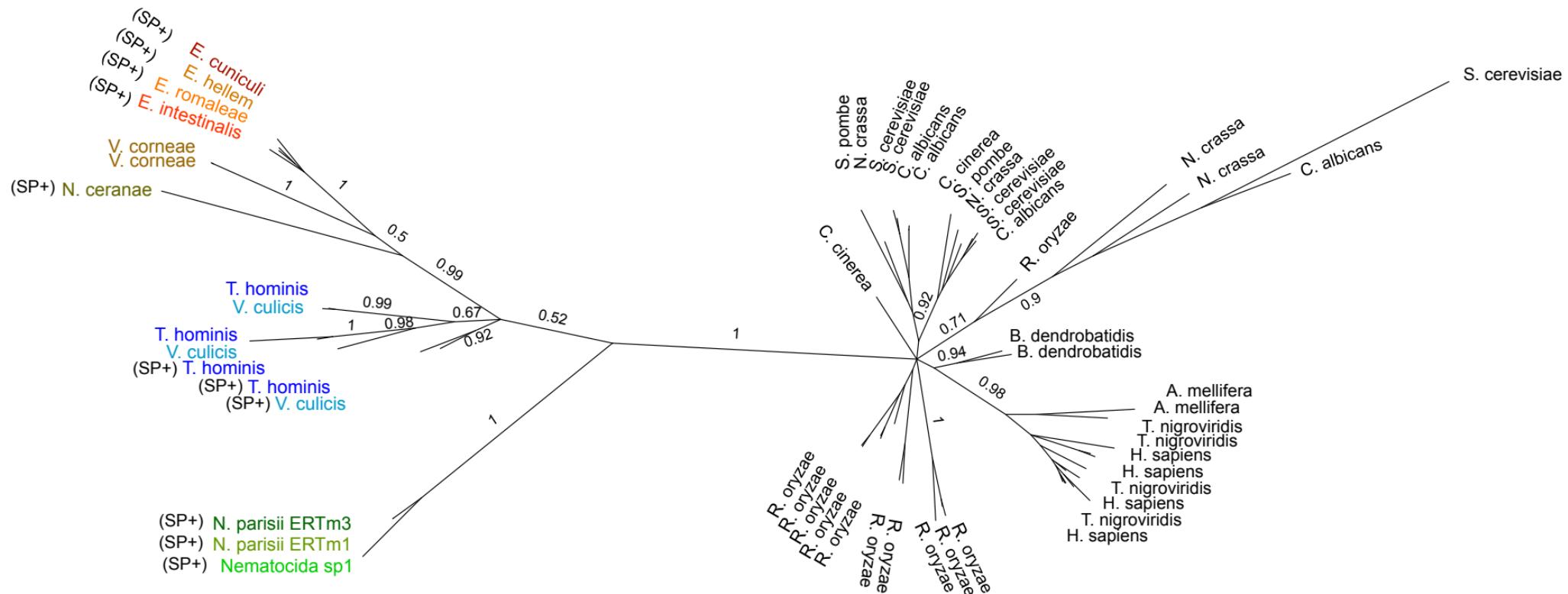


Figure S2



## Figure S3

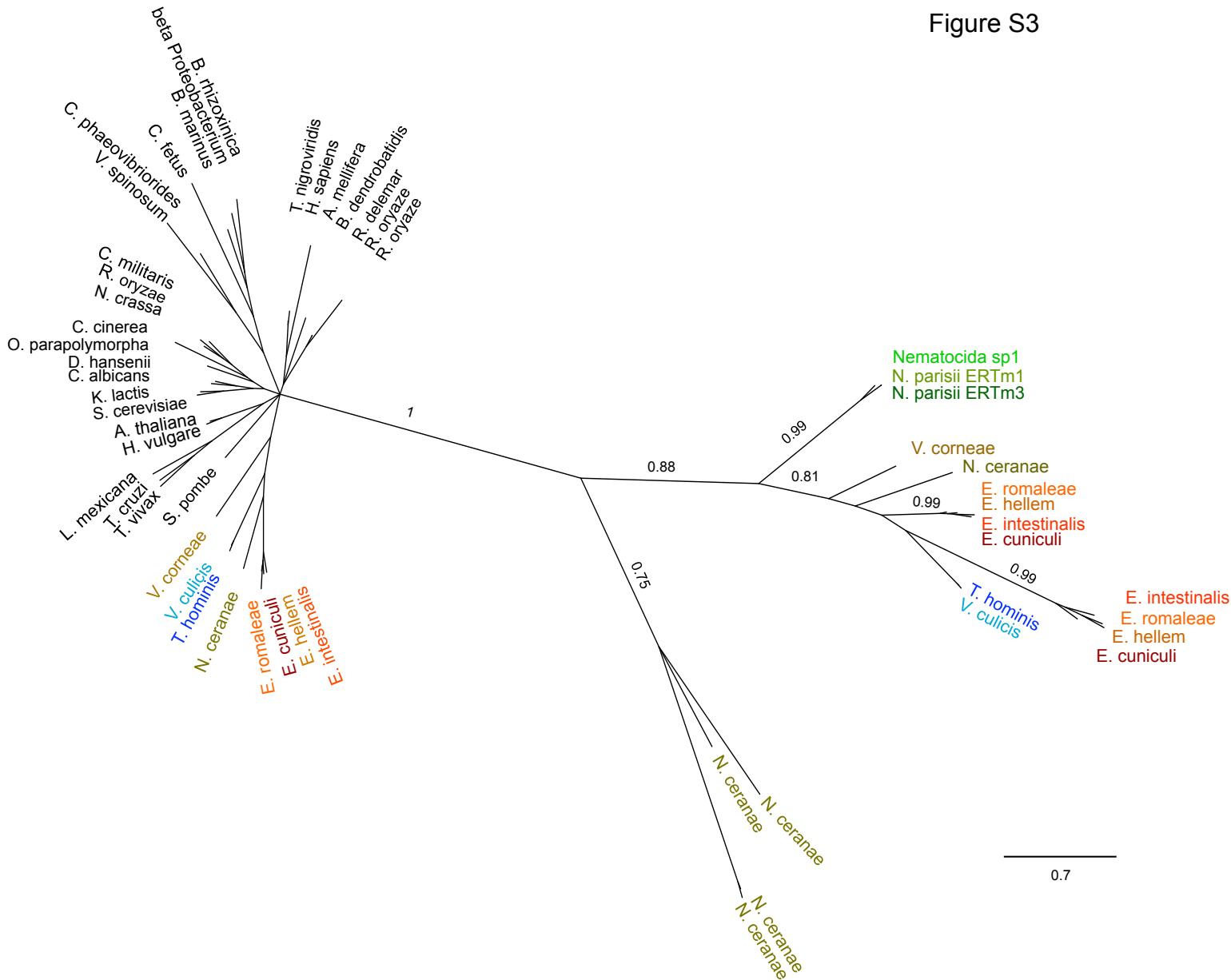


Figure S4

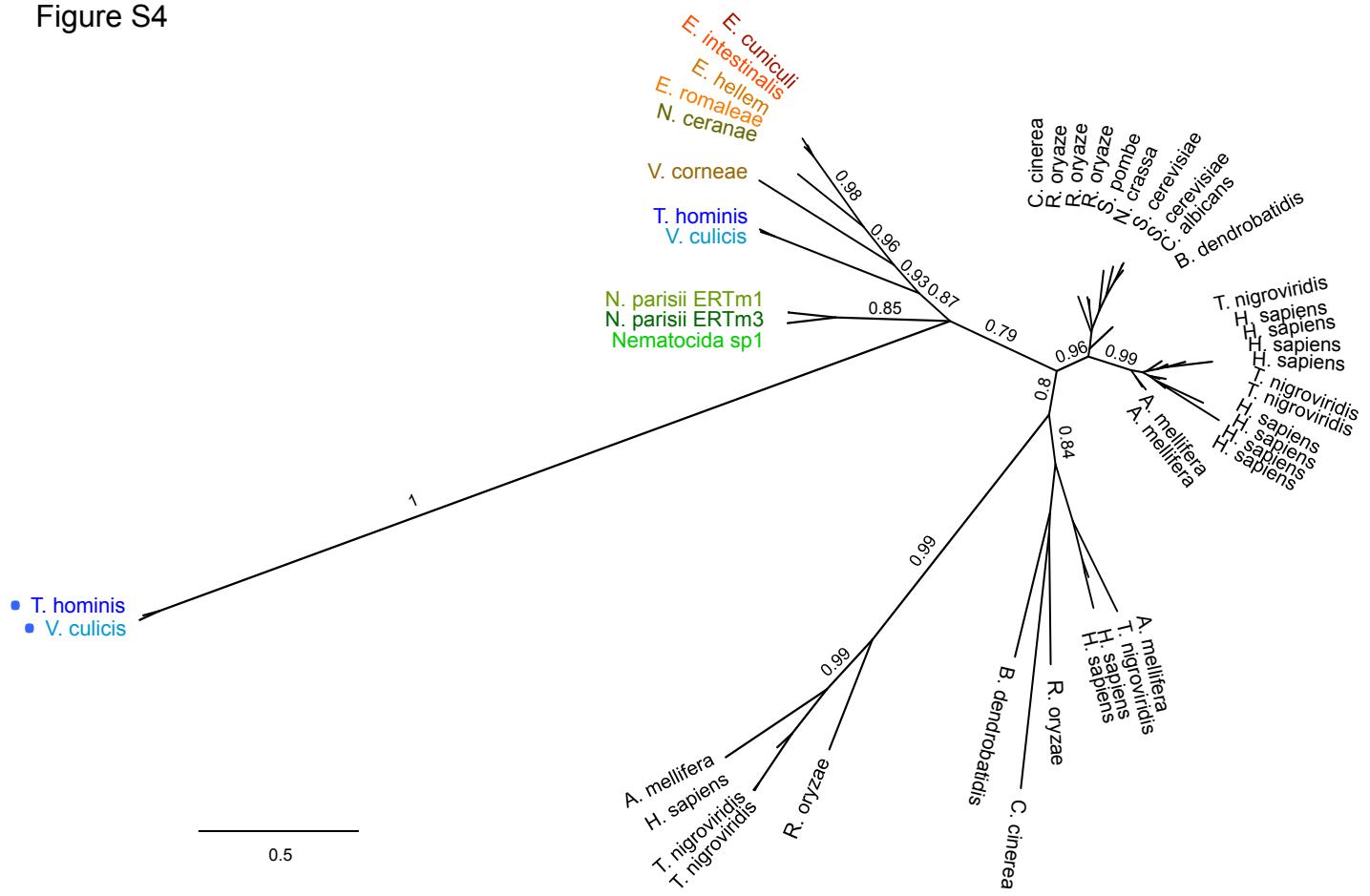
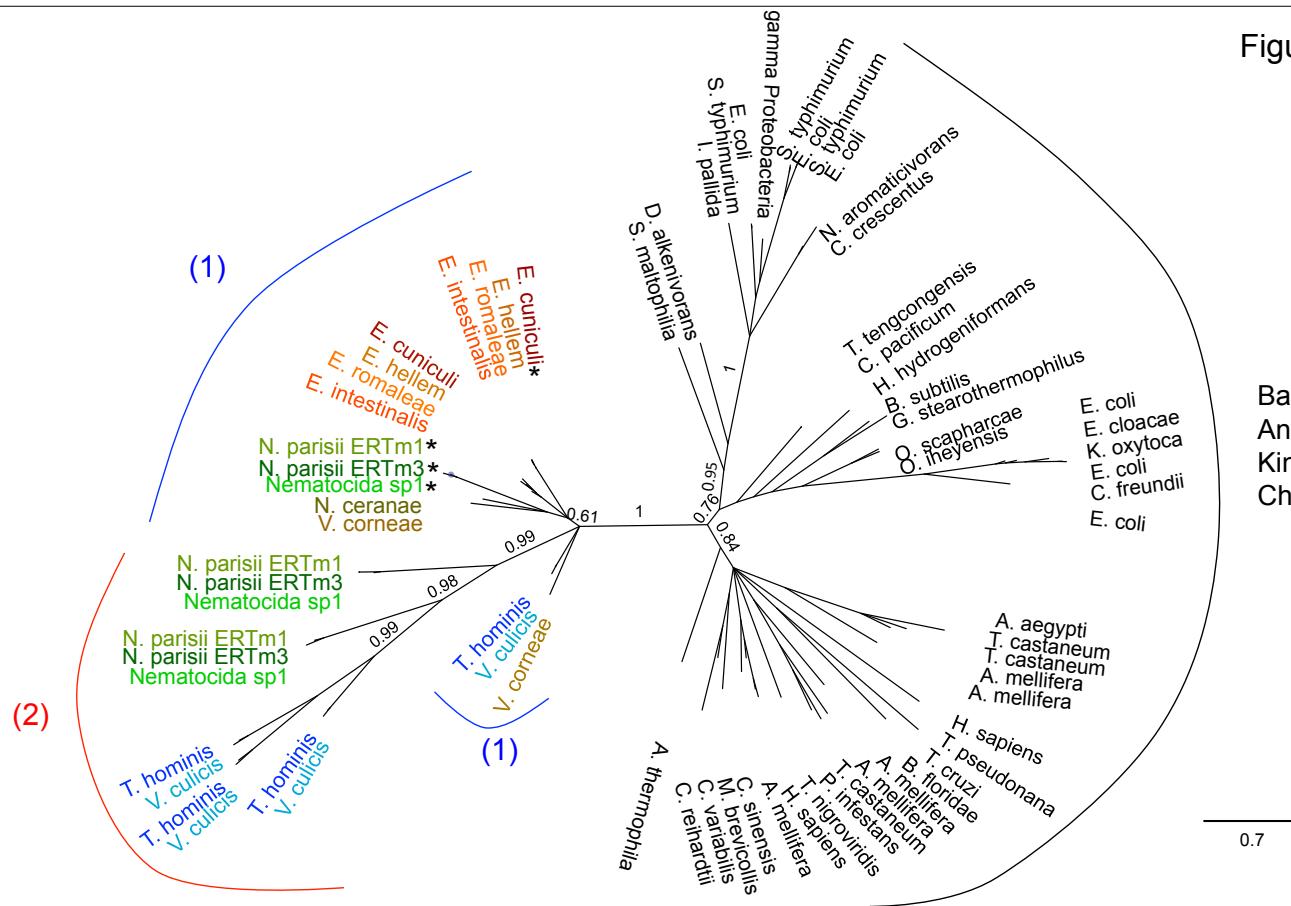


Figure S5

(a)



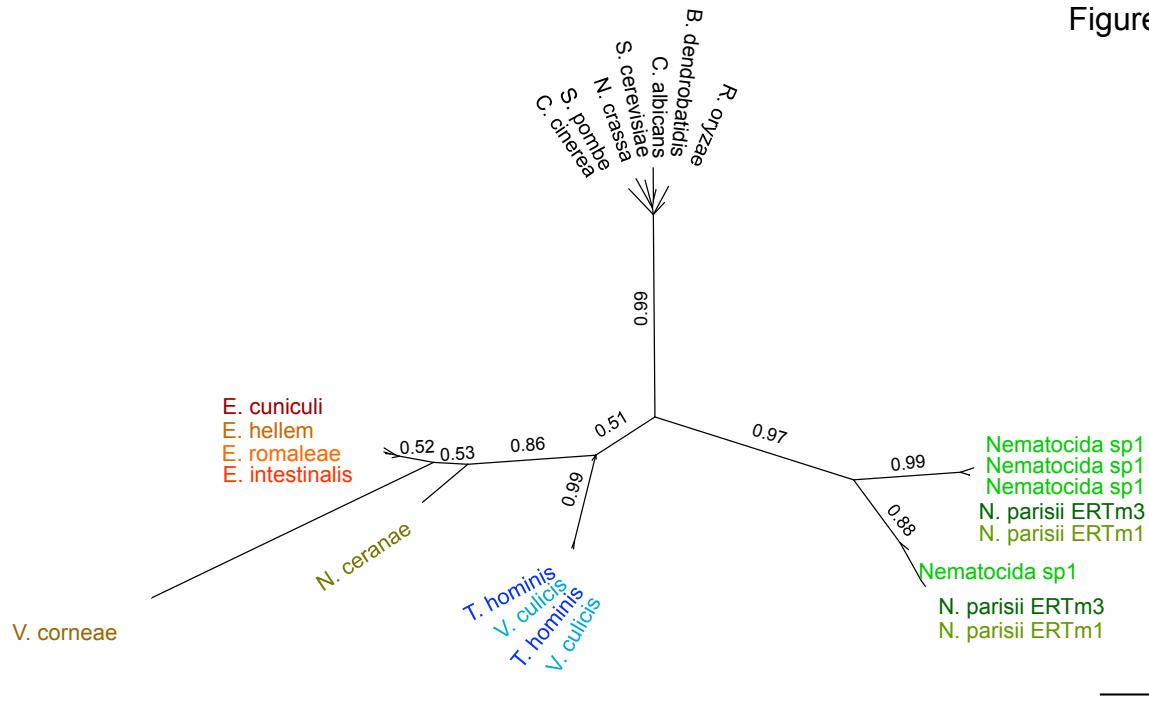
Bacteria  
Animals  
Kinetoplastids  
Chromalveolata

(b)

	<pre> E. cuniculi (1)          EITRQALSISYHTVYLTDILRLIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. cuniculi (2)          GFTTRAAAMTSIYHTVYLTDILRLIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. hellen (1)            GFTTRAAAMTSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. hellen (2)            GFTTRAAAMTSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. intestinalis (1)      GFTTRQALSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. intestinalis (2)      GFTTRQALSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. romaleae (1)          GFTTRQALSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL E. romaleae (2)          GFTTRQALSIYHTVYLTDILRLQIKGYDLPSSWPWLQLTIVNFNFNEESPVATATFCGMIFEVVMLYHFPA SKKIGLVWPFIFIQLFQIIFRVGCYFL N. parisii 1              GFTTRGVMSMILSNYIKNILNFDVDFKPPKYLPTVQVWCLQELYANPMSTCSTFGI  LGLFFCSKPLLNMFELYWSFLLSOTAQGLRFFLYTF N. parisii 3              GFTTRGVMSMILSNYIKNILNFAFDKFPSKSLP  YAQWAQLOGFYANPMSTCSTFGI  LGLFFCSKPLLNMFELYWSFLLSOTAQGLRFFLYTF Nematocida sp.            GFTTRGVMSMILSNYIKNILNFAFDKFPSKSLP  YAQWAQLOGFYANPMSTCSTFGI  LGLFFCSKPLLNMFELYWSFLLSOTAQGLRFFLYTF N. ceranae               GLTRASMTIFLTIYWKDVTKMFKPFDL-SGFPGVISGPPLSIFNNNTSTANLFGFL  VIFTFTTAFDVFLGTGCSNAK-----. V. corneae (1)            AVTRPSAIIITLPSIFHKDILKIPYKDPLEHPWAGIKSLVNFSNP  IGLTLLTGFIVFEMAVMFVADKLDRLLGYFWPLLIAQVVSMSRFLAYYL V. corneae (2)            GFTTRGFTMTNLGFLYPSKVLKFNOKSPFRLFWPLNLVDAHDHOSSTMFGVAL  VIVFYHSSLVTDKLLFVFWPILLISOIIFQLSRFLSYYT T. hominis                GFTTRAGMTLTSIYQTEIILMLEGYTLSDRIPFKFLQSIINVNVKNP  ISTTATCGVRCVLLFVFWPILLFAQVAQFVRFAGYYI V. culicis                GFTTRAGMTLTSIYQTEIILMLEGYTLSDRIPFKFLQSIINVNVKNP  ISTTATCGVLCVLLFVFWPILLFAQVAQFVRFAGYYV N. parisii 1 (1)          GSRSSLQAYLSEILMLNTTRKS-----SDOAYIYFVRTIGELFWWSI  VIELWGDRTVLEALLPVGISLGATRSLIYSF N. parisii 3 (1)          GSRSSLQAYLSEILMLNTTRKS-----SDOAYIYFVRTIGELFWWSI  VIELWGDRTVLEALLPVGISLGATRSLIYSF Nematocida sp. (1)        GSRSSLQAYLSEILRERTRSSK-----GEOGYIYFVRTICLFWWSI  VIELWGDRTVLELLLTGISLGATRSLLYSF N. parisii 1 (2)          GTRGIISSHYLVTLISVYFGEE-----FSKVTSLICLRTFSMCILYYSKHLKKFFGGYHWLLLFSLMAATMRDFNYAF N. parisii 3 (2)          GTRGIISSHYLVTLISVYFGEE-----FSKVTSLICLRTFSMCILYYSKHLKKFFGGYHWLLLFSLMAATMRDFNYAF N. ceranae                GTRGIISSHYLVTLISVYFGEE-----FSKVTSLICLRTFSMCILYYSKHLKKFFGGYHWLLLFSLMAATMRDFNYAF V. culicis (1)            GYKCIISNVTFTFLQIINGLQM-----NTIRMLWGTRCIALLFTYIIFYPA-FVNNILFLVISIFVSAISIAFYI V. culicis (2)            GYKCIISNVTFTFLQIINGLQM-----SYHVHFLRCIPIIYGLSQOESVLGMNTMFLLSVISSSSRFSFYSS V. culicis (3)            GYKCIISNVTFTFLQIINGLQM-----HHIRLFFCRMIAIFALFHSDRCLKFLGYNLFLLSAVFTVLRFTIILTM A. mellifera (1)          GYDRAGSTFLSKLENKGIER-----SFVHLLFFRCIPIIYGLSQOESVLGMNVMFLLCSVIVSTFRSFSFYAS A. mellifera (2)          GYDRAGSTFLSKLENKGIER-----NKIRMLWGTRCISILTYIAPIYI-FVNSVNLFPISIFASAIISFYI A. mellifera (3)          GYDRAGSTFLSKLENKGIER-----HHIRLFFGRMIAIFALFYSSESVCCKLIVGYHLLLAAVCTVFRFTIHTV A. mellifera (4)          GYDRAGSTFLSKLENKGIER-----NCMSKIKLIEGLIVAAETLGGFLVIFPSFSGKGLKKLFGYFTFTFCFICYALRLGLISL G. mellea (1)             GFTFWSAMDSLPLHHLQDKGGDE-----LPFGVMTGAIPAEFLWKSHEHLDYCGHSNLLITAFTVYIIRFTGLQYSL H. sapiens (1)            GFTAWGYIESFLWFLQDGGSR-----SLMGMITITYGGIACGIPLLVLSGPIISKIGHANFLVIGFVFYAIICLRCGYSL H. sapiens (2)            GFTAWGYIESFLWFLQDGGSR-----FTLFGVSVNINHISIPEAYFFSGKFLRQIGHVKVLCMGLGGNVNLRFLYISW T. nigroviridis           GFTSVVWNFLWFLWHTEDLANS-----TLLFGVCSVSHVSLETAFFSHKLEIHLIRVLYIGLACNTARYIYISY </pre>
(1)	
(2)	
animals	

Figure S6

(a)



(b)

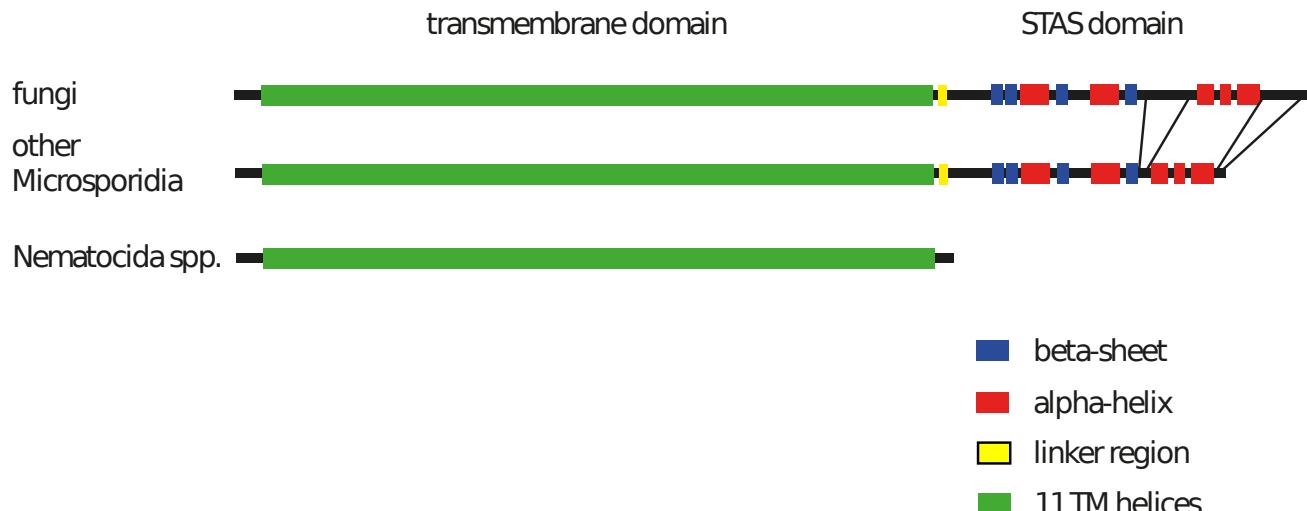
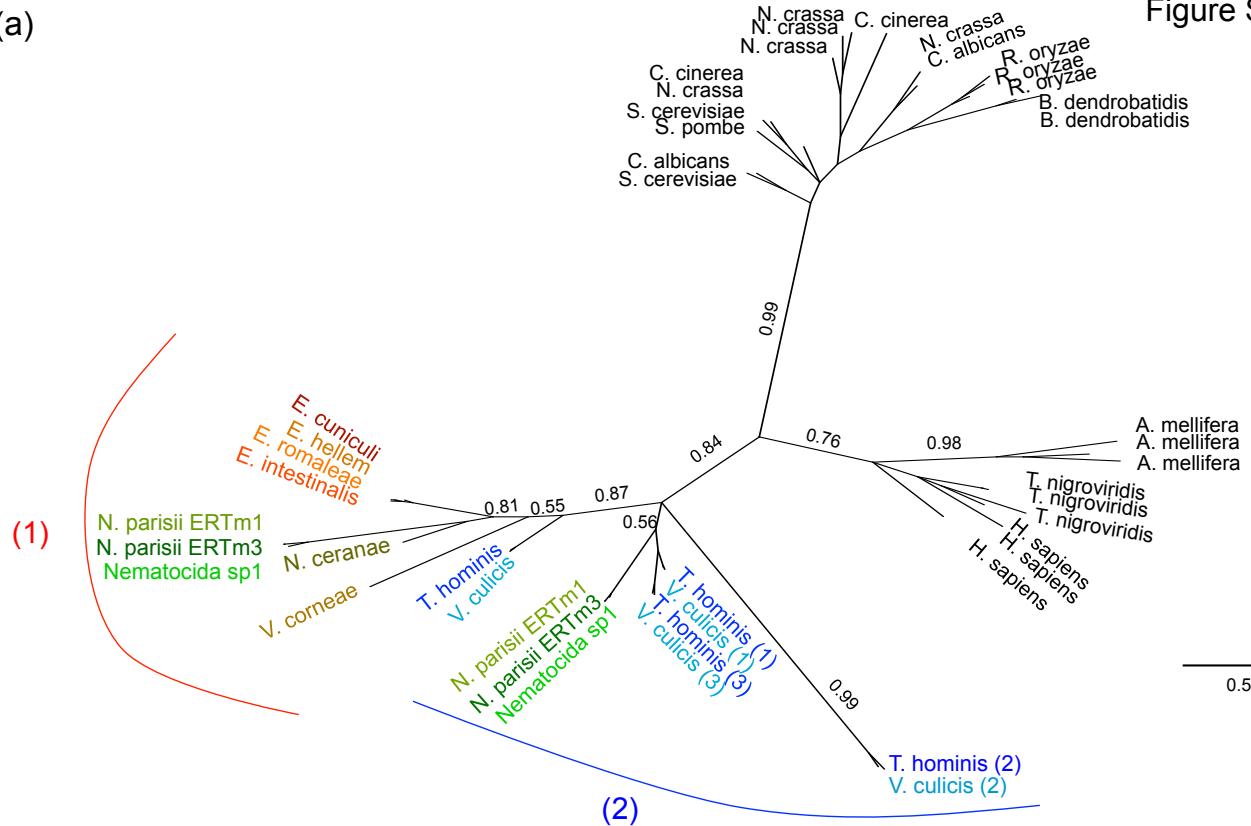


Figure S7

(a)



(b)

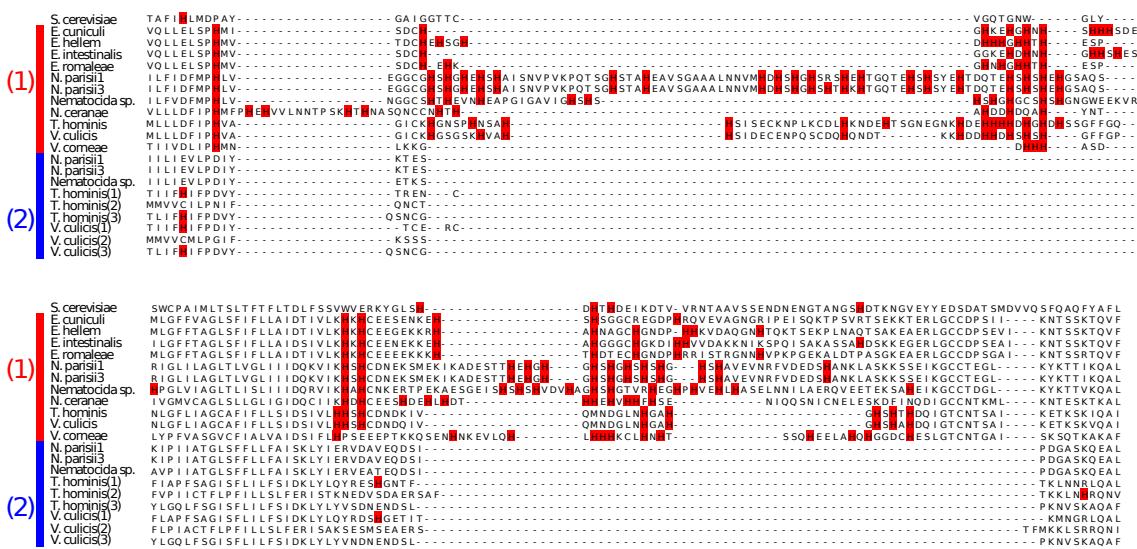


Figure S8

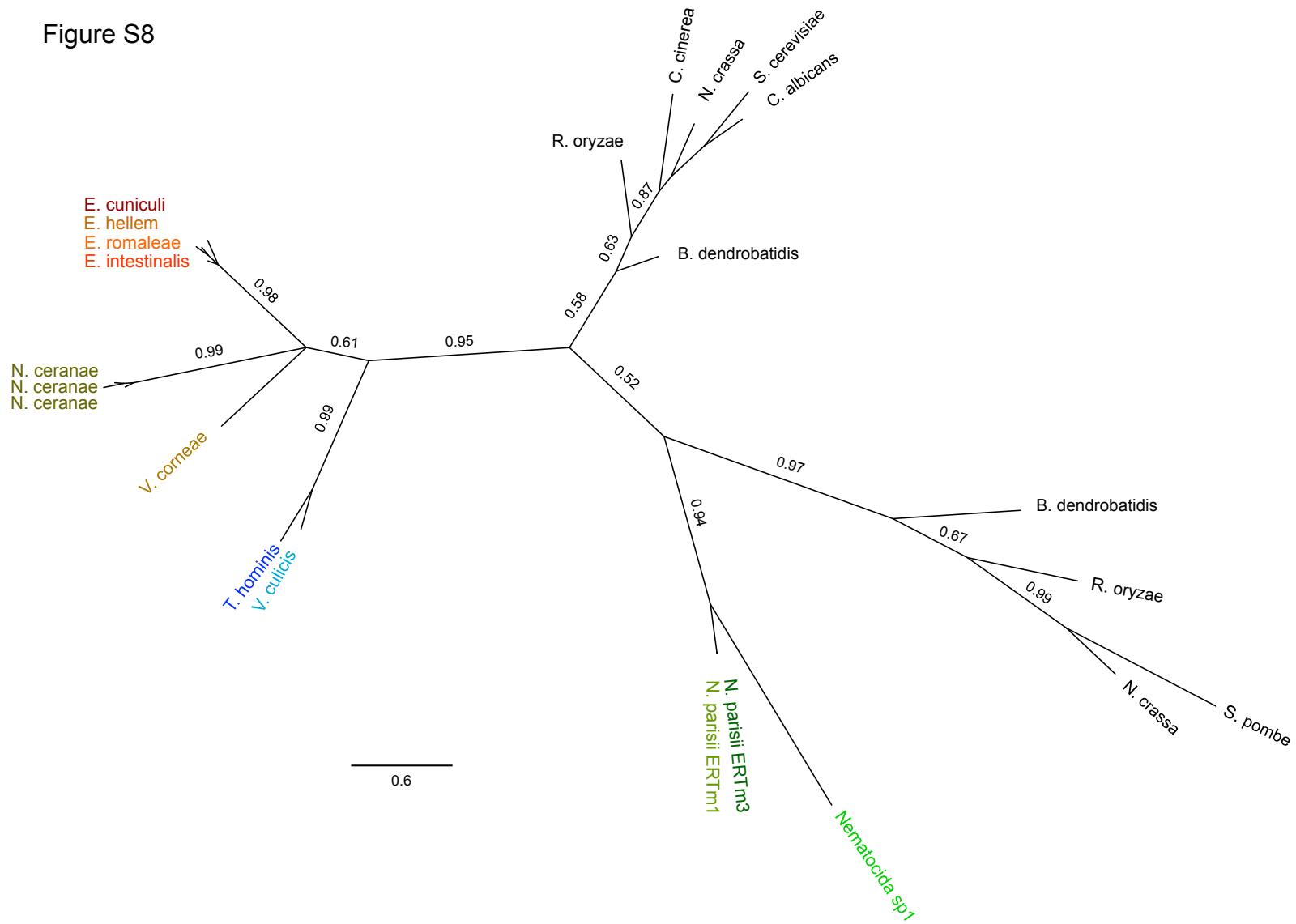


Figure S9

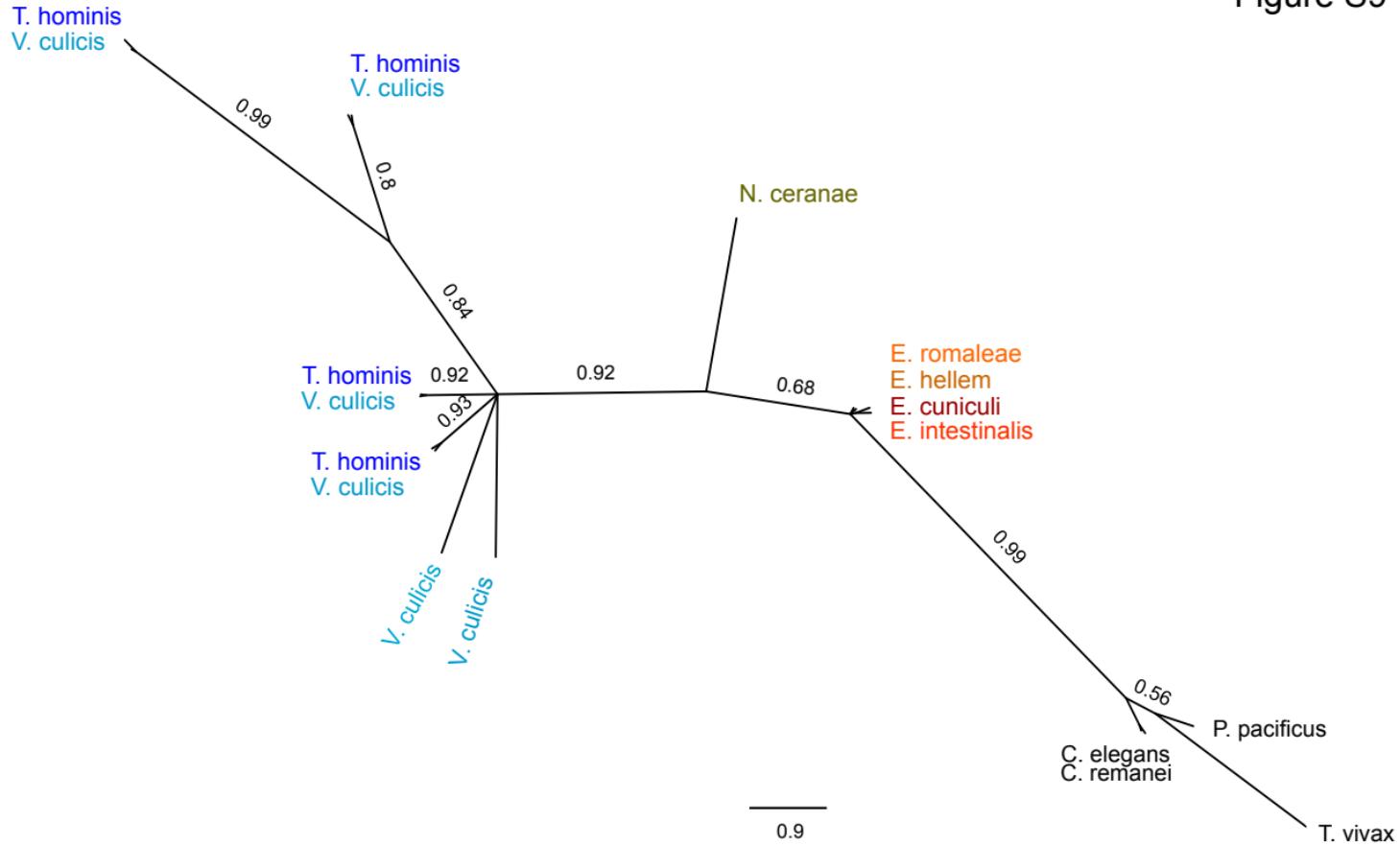


Figure S10

